SEL0414 - Sistemas Digitais

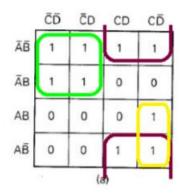
Resolução Lista 5 - Mapas de Karnaugh

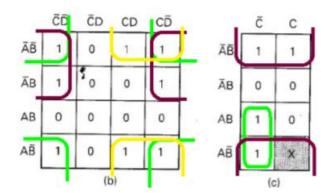
1.

	\bar{B}	B	
Ā	1	1	
Α	0	0	

$$Y = \bar{A}$$

2.





- a) $\bar{A}\bar{C} + \bar{B}C + AC\bar{D}$
- b) $\bar{B}\bar{D} + \bar{A}\bar{D} + \bar{B}C$
- c) $\bar{B} + A\bar{C}$

3.

$$x = \bar{B}\bar{C} + BC + A\bar{B}$$

	$\bar{C}\bar{D}$	$\bar{C}D$	CD	$C\overline{D}$
$\bar{A}\bar{B}$	1	0	1	1
$\bar{A}B$	1	0	0	1
AB	1	0	0	1
$A\bar{B}$	1	1	0	1

$$y = \bar{D} + \bar{A}\bar{B}C + A\bar{B}\bar{C}$$

	$\bar{C}\overline{D}$	$\bar{C}D$	CD	$C\overline{D}$
$ar{A}ar{B}$	1	0	0	0
$\bar{A}B$	0	1	1	0
AB	1	0	1	1
$A\bar{B}$	1	0	0	0

 $x = A\bar{C}\bar{D} + \bar{B}\bar{C}\bar{D} + \bar{A}BD + ABC$

4.

A	В	C	D	S
0	0	0	0	0
0	0	0	1	1
0	0	1	0	1
0	0	1	1	0
0	1	0	0	1
0	1	0	1	1
0	1	1	0	0
0	1	1	1	1
1	0	0	0	1
1	0	0	1	0
1	0	1	0	1
1	0	1	1	1
1	1	0	0	0
1	1	0	1	1
1	1	1	0	1
1	1	1	1	0

	$\bar{C}\overline{D}$	$\bar{C}D$	CD	$C\overline{D}$
$\bar{A}\bar{B}$	0	1	0	1
$\bar{A}B$	1		1	0
AB	0	1	0	1
$A\bar{B}$	1	0	1	1

$$S = \bar{A}B\bar{C} + \bar{A}\bar{C}D + \bar{A}BD + B\bar{C}D + AC\bar{D} + A\bar{B}C + \bar{B}C\bar{D} + A\bar{B}\bar{D} =$$

$$= \bar{A}B(\bar{C} + D) + \bar{C}D(\bar{A} + B) + A\bar{B}(C + \bar{D}) + C\bar{D}(A + \bar{B}) =$$

$$= \bar{A}B\bar{C}\bar{D} + \bar{C}D\bar{A}\bar{B} + A\bar{B}\bar{C}\bar{D} + C\bar{D}\bar{A}\bar{B} =$$

$$\bar{A}B \oplus C\bar{D} + \bar{C}D \oplus A\bar{B}$$

